

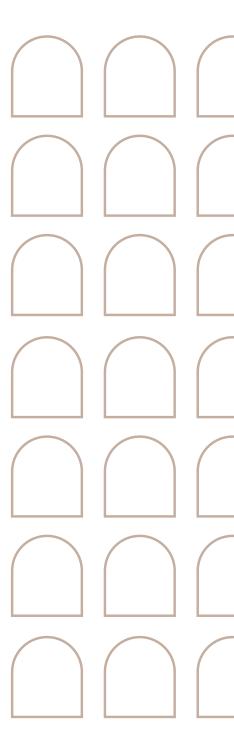
STG Policy Papers

POLICY BRIEF

RAISING CLIMATE AMBITION: G20 COUNTRIES WAY OUT

Author:

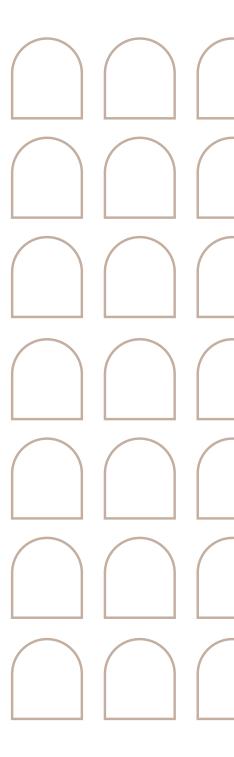
Biba Jasmine Kaur





EXECUTIVE SUMMARY

To save the world from the catastrophic effects of climate change, there is debate at all levels about achieving net zero, including government action and public engagement. In addition to achieving net zero, the focus is on adopting long-term development strategies with low greenhouse gases (GHGs), as these are critical to moving growth paths and investment patterns toward the long-term temperature goal of keeping global warming below 2 degrees Celsius (°C). Given that G20 economies are responsible for nearly 75% of global GHGs, a coordinated approach is critical to enable countries to scale up their ambition and efforts to the levels required to achieve their respective net zero targets. The policy brief provides an overview of the key economic sectors of G20 member countries using climate action databases such as Climate Action Tracker, Climatewatch, etc. The brief outlines a pathway for further scaling up and strengthening G20 climate action, including linkages to immediate climate action. Additionally, it also offers a range of policy solutions that can help member countries achieve climate targets and subsequently reach net zero.



Author:

Biba Jasmine Kaur | Policy Leader Fellow, EUI School of Transnational Governance

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GLOBAL 1. NET **ZERO** Α ASPIRATIONAL GOAL

According to the **United Nations Framework** Convention on Climate Change (UNFCCC), net zero emissions of carbon dioxide (CO₂) are achieved when anthropogenic CO, emissions are globally offset by anthropogenic CO, removals over a period of time. This essentially means that offsets are achieved through CO, removal projects that actually remove CO₂ from the atmosphere¹. The ongoing discussion, including that at the recently concluded 26th session of the Conference of the Parties (COP26) to the UNFCCC, revolves around achieving net-zero status and convincing those Parties to the UN Convention on Climate Change that have not yet committed to it to do so. It is understandable that almost 80% of the carbon stock has already been consumed by developed countries in their pursuit of development. The remaining 20% of available carbon must be shared fairly and equitably, with developed countries creating more space by leaving room and generating negative emissions². Aside from the fact that climate chage is a global problem that will hinder development around the globe, making it imperative to reduce GHGs as as much as possible, member countries should recognise the economic opportunities come from investing in low-carbon technologies that have traditionally not been synonymous economic development. То development aspirations in a fair and equitable way, especially for Africa and South Asia, some principles should be established at the global level to decide how the remaining 20% should be used.

According to the <u>Intergovernmental Panel on</u> Climate Change (IPCC) report titled 'Global Warming of 1.5°C, an IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable

development, and efforts to eradicate poverty', a sound, scientific understanding of the impacts of global warming on natural and human systems and collective action to strengthen and implement the global response are required. The report also clearly states that net anthropogenic CO₂ emissions would need to decrease by about 45% from 2010 levels by 2030 and reach zero by 2050 to limit global warming to 1.5°C.

1.1 Net zero, G20 and nationally determined contributions

Returning to the question of how countries can embark on a credible path to reduce emissions to zero by mid-century. According to a Climate Watch analysis, global CO₂ emissions in 2030 will need to be 45% below 2010 levels to achieve net zero emissions by 2050. However, this is only possible if countries commit to emissions reduction targets and implement policies aligned with the 1.5°C pathway³. For the industrialised countries, this means that they support the developing countries in their climate protection and adaptation measures with financial resources.

The question the world is still grappling with is whether nations can actually limit global warming to 1.5°C, the threshold needed to avoid the most dangerous climate impacts? According to the Climate Transparency Report (2021), G20 countries are responsible for about 75% of global GHG emissions. Only if they significantly increase their ambition can the worst impacts of the escalating climate crisis be curbed. The G20 countries current climate plans - including pledges to reduce emissions by 2030 (known as Nationally Determined Contributions (NDCs)) - are one way to limit warming to reduce increasingly severe wildfires, droughts, floods, and more. Table 1 (see page 9) shows the NDC status of G20 countries.

Among the G20 countries, Australia, Brazil, Indonesia, Mexico, and Russia have not increased their NDC targets, while China, Japan, and South Korea have proposed a more ambitious NDC target. Argentina provides

United Nations Climate Change; Carbon neutrality. Available at https://unfccc.int/blog/a-beginner-s-guide-to-climate-neutrality
IPCC. 2021: Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment

Report of the Intergovernmental Panel on Climate Change. Available at https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM_final.pdf Climate Watch. (n.d.). Historical GHG Emissions. Available at https://www.climatewatchdata.org/ghg-emissionsend_year=2018®ions =G20§ors=total-including-lucf&start_year=1990

no information on its intention to establish a review cycle for its previous net zero and interim targets, while Germany faces immense costs in trying to switch from fossil fuels to renewables, and Canada gives no indication of fairness or equity in the context of its net zero target, while China, Japan, and the Republic of Korea have announced expanded pledges that will result in annual reductions of about 1.2 gigatonnes of CO₂ equivalent (GtCO₂e)⁴. A study by M. den Elzen et al. (2019) explains that G20 economies will likely need to adopt additional policies to collectively further reduce GHG emissions by 2030 to achieve all unconditional NDCs, with the largest contribution from Australia, Canada, the Republic of Korea, South Africa, and the United States⁵.

It is also worth noting that the path to net-zero emissions would have serious development implications, especially when many developing countries, including India, are struggling to gain universal access to energy and alleviate poverty among a large segment of their populations. India, for example, has consistently argued for differentiating the Paris Agreement's ambitious goal of reaching the global emissions peak in the second half of the 21st century, without setting a fixed timeframe.

The <u>Paris Agreement</u>, a universal, legally binding global climate change agreement adopted at the Paris Climate Change Conference (COP21) in December 2015, does not require countries to commit to carbon neutrality or net zero because it will take longer for developing countries to reach their peak. The goal of the Paris Agreement is to limit the global temperature increase to well below 2°C, while making further efforts to limit the increase to 1.5°C. According to a study by the University of Melbourne (2017), the G20's national climate action can have a significant impact on climate. Moreover, with 78% of global GDP6, the G20 has the ability to fund and lead global action

to achieve the goals of the Paris Agreement. Following the communiqué from the latest G20 summit in Hangzhou, which called for the Paris Agreement to enter into force as soon as possible, rapid ratification by G20 members, enabled the Paris Agreement to enter into force in less than one year⁷.

1.2 Momentum behind net-zero

The recent discourse at COP26 on climate change in 2021 revolved around developed countries calling for greater ambition, net zero emissions, long-term emissions reduction targets, and new NDCs. This has also been reinforced by a series of summits held since the United Nations Secretary-General's Climate Action Summit in September 2019 and the Climate Ambition Summit on December 12, 2020, and COP26 in Glasgow in 2021. China's announcement to achieve net-zero emissions by 2060 and the United States' (US) re-entry into the Paris Agreement have further strengthened the efforts of developed countries to raise their ambition. Currently, some 49 countries and the European Union (EU) have committed to a netzero target8.

2. G20 CLIMATE CHANGE NARRATIVE IN 2021

The G20 includes countries that are liable for both past and future impacts of their emissions, which account for about 75% of total global emissions. However, the 2018 United Nations Emissions Gap Report notes that the G20 is unable to meet its emissions reduction pledges, despite having the technologies and financial resources to do so⁹.

G20 countries have significant influence on the design and implementation of the global climate regime. The last G20 summit in 2021 was held under the Italian presidency. Prior to the leaders' summit, a series of seminars and meetings of working groups, sherpas, and

Emission Gap Report. 2020. Available at: https://unfccc.int/process-and-meetings/the-paris-agreement/nationally-determined-contributions-ndcs/nationally-determined-contributions-ndcs

Elzen, Michel et al. 2019. Are the G20 economies making enough progress to meet their NDC targets? Energy Policy. 126. 238-250.
World Bank. 2014. "World Development Indicators." Washington DC. Available at https://openknowledge.worldbank.org/bitstream/han- dle/10986/18237/9781464801631.pdf

Pont, Robiou Du. 2017. Available at https://www.climatecollege.unimelb.edu.au/files/site1/docs/9834/Paris%20Agreement%20-%20Fair%20share%20 for%20G20%20countries.pdf

Brown to Green Report 2019: The G20 Transition towards a Net-Zero Emissions Economy. 2019. Available at https://www.climate-transparency.org/ wp-content/uploads/2019/11/Brown-to-Green-Report-2019.pdf

Emission Gap Report. 2018. Available at https://www.unep.org/resources/emissions-gap-report-2018

ministers were scheduled on the environment, climate change, energy, trade, finance, and other issues. Climate change, particularly climate finance, was linked to most of the G20's work areas, as were concerns about green recovery and greater ambition. In 2021, the Italian presidency also introduced a joint climate and energy process, bringing together the work of the Climate Sustainability Working Group (CSWG) and the Energy Transition Working Group (ETWG). Previous G20 presidencies, including Saudi Arabia in 2020, have established parallel working groups on climate change and energy. The Italian G20 presidency, on the other hand, focused on the climate-energy nexus as a platform for interaction in a global debate on policies to guide the necessary energy transition. Unlike previous G20 presidencies, the Italian presidency focused only on climate change mitigation in the energy sector, underpinning ambitious goals without engaging in a dialogue on climate change adaptation and the means to implement it.

The CSWG and ETWG joint issue note addresses energy security and efficiency, smart cities for the future with smart energy and nature-based solutions (NbS), NbS in the urban environment, and green finance by pointing to carbon neutrality and net-zero emissions as a means to accelerate a gradual reduction in global GHG emissions. It also links sustainable COVID recovery measures to the review of NDCs and long-term low emissions strategies in light of COP26 deadlines.

3. STRENGTHENING SECTORAL **INTERVENTIONS ACROSS G20 MEMBERS**

While some G20 members are increasing their efforts to combat climate change, others are doing little to reduce their significant contribution to the problem. Thus, a rapid transition to a near zero-carbon economy is needed, supported by assistance from developed countries and international

exchange and cooperation. A number of key sectors are described below, including actions required by member states to mitigate climate change. The list is illustrative and not exhaustive.

3.1 Energy sector

Energy-related CO₂ emissions from G20 countries increased by 1.8% in 2018 due to high economic growth and rising energy consumption, according to the 2019 report titled 'Brown To Green The G20 Transition Towards A Net-Zero Emissions Economy'. In 2018, energy supply from coal, oil and gas increased in countries such as Turkey and Indonesia, which are rapidly expanding their coal-fired capacity. On the other hand, only France, Italy, the United Kingdom and Canada have plans to phase out coal in line with the 1.5°C target¹⁰.

With coal accounting for 30% of global CO₂ emissions and about 30% of primary energy supply in G20 countries in 2018, accelerating the phase-out of coal is critical to the global energy transition and climate action that will ultimately lead to a net-zero economy¹¹. In 2009, the G20 committed to phasing out fossil fuel subsidies over the medium term. A decade later, however, G20 governments continue to support fossil fuel production and consumption for billions, spending at least USD 63.9 billion annually on coal alone¹². Following the last G20 meeting in 2021, the Rome Leaders' Declaration agreed to work together on the deployment and diffusion of zeroor low-carbon technologies and renewable technologies, including sustainable bioenergy, to enable the transition to low-emission energy systems. This will also allow countries to commit to phasing out new coal-fired power plants as early as possible. As a result, the G20, in collaboration with the intergovernmental International Energy Forum, will promote a dialogue between producers and consumers to maximise the efficiency, accountability, and security of energy markets¹³.

¹⁰ ClimateWatch, Net-Zero Tracker. Available at https://www.climatewatchdata.org/net-zero-tracker

¹¹ European Comission. 2020. In focus: Towards a just and clean energy transition. Available at https://ec.europa.eu/info/news/focus-towards-just-andclean-energy-transition-2020-oct-1_en

https://www.iisd.org/publications/report/g20-coal-subsidies-tracking-government-support-fading-industry

G20 Rome Leader's Declaration. 2021. Available at https://www.ilo.org/wcmsp5/groups/public/--dgreports/--dcomm/documents/meetingdocument/ wcms 826035.pdf

3.2 Transportation sector

Transportation-related emissions increased 1.2% in 2018. The United States, Canada, and Australia have the highest per capita transportation emissions. By 2050, the share of low-carbon fuels in the G20 transport mix (6%) would need to increase more than tenfold to limit warming to 1.5°C. According to the report jointly published by Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ), REN21, and Agora Verkehrswende, titled 'Towards Decarbonizing Transport: A 2018 Stocktake on Sectoral Ambition in the G20', renewable energy use needs to increase in G20 countries to decarbonize the transport sector, only slightly more than 3% of energy in the transport sector comes from renewables, compared to a 10.4% share of total final energy demand¹⁴.

3.3 Building sector

Among the G20 countries, the building sector is the one with the highest increase in emissions with a 4.1% rise¹⁵. If electricity based emissions are included, Saudi Arabia, the US and Australia have the highest per capita emissions in the buildings sector, clearly lacking ambitious policies to substantially reduce emissions in the sector. However, China, India and Indonesia also contributed to the increasing emissions per capita in the building sector from 2013 to 2018¹⁶. By 2030, emissions from the building industry must be halved, which will need energy retrofits of existing structures and the adoption of the lowest energy standards for new construction.

3.4 Agriculture

According to Food Agriculture Organization, G20 GHG emissions from agriculture for 2018 include emissions from enteric fermentation (43%), synthetic fertilizers (20%), manure use (28%), crop residue (7%), and burning of savanna (2%) respectively. According to the 'brown to green' report, global methane

emissions must be reduced by 10% by 2030, just as nitrous oxide emissions must be reduced by 10% by 2030. Emissions can also be decreased by promoting and incentivizing low-carbon agriculture practices, such as innovative feed additives, better waste management, biorefinery, reducing fertilizer use, and supporting organic farming.

4. SIGNIFICANT CHALLENGES AHEAD OF G20

On the financial front, 18 of the 20 G20 members have already implemented or are in the process of implementing carbon-pricing schemes. G20 economies are increasingly introducing policies and regulations that can help green the financial system. Emerging economies are pioneering measures that reduce climate-related risks to the financial system¹⁷.

The Paris Agreement warns about GHGs peaking in the second half of this century, with developed countries taking the lead and acknowledging that developing countries will need more time. Mediocre efforts by developed countries to reduce GHGs and mitigate climate change would therefore not result in limiting global temperatures rise above 1.5°C.

Developed countries' historical responsibilities necessitates that they have attained carbon neutrality, and subsequent announcements are a case of too little, too late for developed countries. According to the Climate Transparency Report 2021, developing countries' developmental paths are unlikely to reach carbon neutrality or peak GHGs by midcentury¹⁸.

To enable developing nations to use their fair share of carbon to support sustainable development initiatives, it is critical that wealthy countries consume less carbon in the future. Sustainable development, poverty reduction,

Vieweg, Marion et al. 2018. Towards Decarbonising Transport – A 2018 Stocktake on Sectoral Ambition in the G20. Available at https://www.ctc-n.org/ sites/www.ctc-n.org/files/resources/181130 towards decarbonising transport final.pdf

¹⁵ International Institute for Sustainable Development. 2019. Available at https://sdg.iisd.org/news/climate-transparency-review-warns-all-g20-countriesneed-to-increase-ndc-ambition/

¹⁶ World Energy Statistics, Enerdata. 2019. Available at https://yearbook.enerdata.net/

¹⁷ Realizing Opportunities of the 21st Century for ALL. 2020. Communique, G20 Finance Ministers & Central Bank Governors Meeting. Available at http://www.g20.utoronto.ca/2020/Communique_Final_22-23_February_2020.pdf

Climate Transparency Report. 2021. Available at https://www.climate-transparency.org/wp-content/uploads/2021/10/CT2021-Highlights-Report.pdf

and climate justice are all fundamental pillars of the Paris Agreement, and should thus be considered in future climate negotiations.

5. G20 CLIMATE PROGRESS UNDER **WAY: POLICY SOLUTIONS**

For the G20 to limit warming to 1.5°C, it must pull its weight and join with developed countries to present ambitious climate plans to responsibly finance climate action in developing countries. The following actions could help the G20 accelerate its net-zero target path:

5.1 Transition to a green economy

Invest in a green economy to drive the development and deployment of new carbonsaving technologies by creating a larger market for them, enabling more learning-by-doing, and generating mutually beneficial knowledge spillovers.

5.2 Decarbonising the electricity sector

Keeping global temperatures at safe levels will require radical changes in the way energy is produced and consumed, through the deployment of energy efficiency and lowcarbon technologies such as renewables, nuclear and CCUS (carbon capture, use and storage). This transformative change can only happen if a broad consensus is reached among the various stakeholders from industry, civil society and academia. Above all, public support and engagement is crucial. It is absolutely essential that the public recognizes decarbonisation as the only way forward. Greater public recognition will create momentum for accelerating action towards a carbon-neutral transition.

5.3 Finance and technology

Looking ahead, G20 policies should be closely aligned with efforts to achieve carbon neutrality. To this end, the rebalancing of institutional frameworks should focus on mobilizing financial resources, i.e. a climate change fund, achieving a just transition for climate vulnerable populations and communities, and promoting green finance. Member States should also work closely with the private sector to unlock private

finance and accelerate the green transition.

5.4 Carbon pricing

To achieve net zero emissions at a reasonable total cost, carbon pricing is an effective tool to reduce carbon emissions in general by encouraging a shift from high to low carbon activities and incentivizing energy efficiency. It also generates revenue that can be used to fund green public investments and support measures for households and workers affected by the energy transition. Hard-to-decarbonise sectors would require additional sector-specific measures alongside carbon pricing. If carbon pricing faces political-economic obstacles, regulations are an alternative instrument to limit emissions, even if they are likely to be more costly for the economy¹⁹.

6. HALF-MEASURES, OR CONCRETE **ACTIONS?**

is evident that only commitment, lt determination and optics can help realign G20 priorities to reduce carbon emissions significantly. Improving energy efficiency coupled with use of low-carbon energy sources, decarbonising energy-intensive sectors, and integrating the principles of sustainability into national policies can achieve this. Supporting sound governance is also essential to achieve net zero. In addition, there is an urgent need to promote an ongoing, open and transparent dialogue on climate change issues. Increased support for international initiatives and partnerships is an opportunity to harness synergies and take joint action to address climate challenges, explore new avenues and breakthrough technologies, particularly in the field of research, where transnational cooperation networks can be leveraged to strengthen climate goals.

To be 1.5°C compatible, and ultimately much lower levels, energy transition is critical and requires a common response and a longterm vision. Only by embracing the values of sustainability can we transform the present to succeed in the future. This is where each member state can play a crucial role, on a path that will lead it to climate neutrality in the long

term.

Now more than ever, despite the major new challenges posed by the COVID-19 pandemic and its profound impact on economies, G20 countries should reaffirm their commitment in this direction. To achieve the ambitious climate targets, developed countries need to substantially increase their financial support to developing countries to reduce emissions and build resilience to the impacts of climate change bilateral climate finance, finance through the multilateral climate change funds and support to multilateral and bilateral institutions. Delaying action would lead to more costly and difficult decarbonisation rates in the years ahead and could put the 1.5°C target out of reach and derail pledges and commitments to achieving net zero.

Table 1: G20 nations: NDC status						
Country	Timeframe of original NDC	Original NDC	New/Enhanced NDC	Extent of enhancement	Peaking** /Net zero year	Net zero declaration/legislated/ policy document
Brazil	2025	37% below 2005 emissions levels by 2025 and indicative 43% by 2030	December 2020	Confirmed the indicative target of 2030	NA/2060	Declaration
Russian Federation	2030	25% to 30% below 1990 levels by 2030	Not submitted	Not submitted	-	Declaration (2060)
India	2030	33%-35% by 2030 below 2005 levels	Not submitted	Not submitted	-	Declaration (2070)
China	2030	60% to 65% below 2005 levels by 2030	Not submitted	Not submitted	2030/2060	In policy document
South Africa	2030	17-78% above 1990 by 2030 excl. LULUCF* over the period 2025–2030	September 2021	Keep emissions to a range of 350-420 Mt CO2e by 2030 (incl. LULUCF)	2020 - 2025/ 2050	Declaration
Australia	2030	26-28% reduction by 2030 below 2005 level	December 2020	Same targets	2006/2050	In policy document
Argentina	2030	483 MtCO2 eq in 2030	December 2020	26% lower than first NDC	NA/2050	Declaration
Canada	2030	30% by 2030 below 2005	Submitted in July 2021	40-45% below 2005 levels	NA/2050	In law
Indonesia	2030	29% below business as usual (BAU) emissions of GHG	Submitted in July 2021	Same targets	2060	Proposed
EU (including France, Italy and Germany)	2030	40% below 1990 levels by 2030	Submitted in December 2020	55% net reduction below 1990 levels.	1979/2050	In law
Japan	2030	26% below 2013 levels in 2030 compared to FY 2013	Submitted in March 2020.	Same targets	2004/2050	In law
Republic of South Korea	2030	37% below BAU by 2030	Submitted in December 2020	Same targets	NA/2050	In law
United Kingdom	2030	40% reduction in GHG below 1990 levels by 2030.	December 2020	At least 68% net reduction in GHG emissions by 2030	1973/2050	In law
United States of America	2030	26%–28% below 2005 levels by 2025, including LULUCF*	(After rejoining Paris Agreement) Submitted on April 2021	Net GHG emissions reduction by 50-52 percent below 2005 levels in 2030	2007/2050	In policy document
Mexico	2030	25% below baseline by 2030	December 2020	Same Targets	2025-26/ NA	-
Turkey	2030	21% below BAU by 2030	Not submitted	Not submitted	NA/2053	In policy document
Saudi Arabia	2030	Reduction up to 130 MtCO2eq by 2030	Not submitted	Not submitted	NA/2060	Declaration

Source: Information collated from Climate Action Tracker²⁰, Net zero tracker²¹ and Emissions Database for Global Atmospheric Research²²

^{20 &}lt;a href="https://climateactiontracker.org/">https://climateactiontracker.org/

^{21 &}lt;a href="https://eciu.net/netzerotracker">https://eciu.net/netzerotracker

https://edgar.jrc.ec.europa.eu/report_2021#emissions_table

^{*}LULUCF- Land use, land-use change, and forestry

^{**}Peaking – means curbing emissions growth

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School of Transnational Governance European University Institute Via Camillo Cavour 65, Firenze, FI 50129 Email: stg.publications@eui.eu

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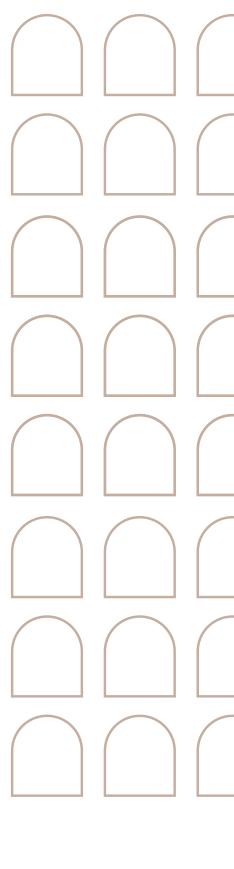






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